STIC Search Report
Biotech-Chem Library

STIC Database Tracking Number: 157431

TO: Devesh Khare **Location: 5c35/5c18** **Art Unit: 1623** **Thursday, July 21, 2005** **Case Serial Number: 10/697763**	**From: Noble Jarrell** **Location: Biotech-Chem Library** **Rem 1B71** **Phone: 272-2556** **Noble.jarrell@uspto.gov**

Search Notes

157481

Access DB#_____

SEARCH REQUEST FORM

Scientific and Technical Information Center

Requester=s full Name: Devesh Khare Examiner #: 77931 Date: 06/24/2005

Art Unit: 1623 Phone Number 272-0653 Serial Number: 10/697,763

Mail Box: Remsen 5C18 and Bldg/Room Location: 5C35 Results Format Preferred (circle):PAPER DISK E-MAIL

If more than one search is submitted, please prioritize searches in order of need.

****

Please provide a detailed statement of the search topic, and describe as specifically as possible the subject matter to be search Include the elected species or structures, key words, synonyms, acronyms, and registry numbers, and combine with the concept or utility of the invention. Define any terms that may have a special meaning. Give examples or relevant citations, authors, etc, if known. Please attach a copy of the cover sheet, pertinent claims, and abstract.

Title of Invention: See Bib Data Sheet on e-dan.

Inventors (please provide full names): See Bib Data Sheet on e-dan.

Earliest priority Filing Date: **10/30/2003**

**For Sequence Searches Only* Please include all pertinent information (parent, child, divisional, or issued patent numbers) along with the appropriate serial number.*

Please carry out a search on the attached claim sheet.

Thank you.

STAFF USE ONLY	Type of Search	Vendors and cost where applicable
Searcher: NOBLE	NA Sequence (#)_____	STN ✓
Searcher Phone #:_____	AA Sequence (#)_____	Dialog_____
Searcher Location:_____	Structure (#) _____	Questel/Orbit_____
Date Searcher Picked Up:_____	Bibliographic ✓	Dr. Link_____
Date Completed:_____	Litigation _____	
Lexis/Nexis_____		
Searcher Prep & Review Time: 35	Fulltext _____	Sequence Systems_____
Clerical prep time:_____	Patent Family_____	WWW/Internet_____
Online Time: 45	Other _____	Other (specify)_____

PTO-1590 (1-2000)

1. A process of recovering arabinose and optionally at least one other monosaccharide selected from the group consisting of galactose, rhamnose and mannose from vegetable fiber rich in heteropolymeric arabinose, wherein the process comprises the following steps:

(a) controlled hydrolysis of said vegetable fiber in an aqueous solution to produce an aqueous hydrolyzate containing arabinose, at least one other monosaccharide selected from the group consisting of galactose, rhamnose and mannose, and optionally poly-, oligo- and/or disaccharides,

(b) optional neutralization of said aqueous hydrolyzate,

followed by at least one of the following steps (c) and (d):

(c) fractionation of said aqueous hydrolyzate to obtain a fraction enriched in arabinose, at least one other fraction selected from the group consisting of a fraction enriched in galactose, a fraction enriched in rhamnose and a fraction enriched in mannose, and optionally one or more fractions enriched in poly-, oligo- and/or disaccharides, followed by the recovery of said fraction enriched in arabinose and optionally one or more of said other fractions, and

(d) crystallization of arabinose.

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=> d his

     (FILE 'HOME' ENTERED AT 13:21:29 ON 20 JUL 2005)

     FILE 'HCAPLUS' ENTERED AT 13:21:38 ON 20 JUL 2005
L1             1 US2005096464/PN

     FILE 'REGISTRY' ENTERED AT 13:21:57 ON 20 JUL 2005

     FILE 'HCAPLUS' ENTERED AT 13:21:59 ON 20 JUL 2005
L2               TRA L1 1- RN :         8 TERMS

     FILE 'REGISTRY' ENTERED AT 13:21:59 ON 20 JUL 2005
L3             8 SEA L2

     FILE 'WPIX' ENTERED AT 13:22:01 ON 20 JUL 2005
L4             1 US2005096464/PN

=> b hcap
FILE 'HCAPLUS' ENTERED AT 13:22:23 ON 20 JUL 2005
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FILE COVERS 1907 - 20 Jul 2005  VOL 143 ISS 4
FILE LAST UPDATED: 19 Jul 2005  (20050719/ED)

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 This file contains CAS Registry Numbers for easy and accurate
 substance identification.

=> d all l1

L1   ANSWER 1 OF 1  HCAPLUS  COPYRIGHT 2005 ACS on STN
AN   2005:394875  HCAPLUS
DN   142:426444
ED   Entered STN:  09 May 2005
TI   Separation process
IN   Heikkila, Heikki; Koivikko, Hannu; Nurmi, Juha; Mattila, Jari; Saari, Pia;
     Nurmi, Nina; Sarmala, Paivi; Lindroos, Mirja; Lewandowski, Jari
PA   Finland
SO   U.S. Pat. Appl. Publ., 29 pp.
     CODEN: USXXCO
DT   Patent
LA   English
IC   ICM  C07H001-08
INCL 536124000
CC   9-16 (Biochemical Methods)
     Section cross-reference(s): 11, 17
FAN.CNT 1
     PATENT NO.          KIND  DATE        APPLICATION NO.         DATE
     --------------      ----  --------    --------------------    --------
PI   US 2005096464        A1   20050505    US 2003-697763          20031030 <--
     WO 2005042788        A1   20050512    WO 2004-FI641           20041029
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Search done by Noble Jarrell

W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW
RW: BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PL, PT, RO, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG

PRAI US 2003-697763 A 20031030

CLASS

PATENT NO.	CLASS	PATENT FAMILY CLASSIFICATION CODES
US 2005096464	ICM	C07H001-08
	INCL	536124000
US 2005096464	NCL	536/124.000

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AB The invention relates to a process of recovering arabinose and optionally other monosaccharides from vegetable fiber rich in heteropolymeric arabinose, such as gum arabic. Said other monosaccharides are typically selected from galactose and rhamnose. The process of the invention comprises controlled hydrolysis of the arabinose-rich vegetable fiber and fractionation of the hydrolysis product to obtain a fraction enriched in arabinose and optionally other product fractions followed by crystallization of arabinose. The invention also relates to a novel method of crystallizing arabinose from biomass-derived material. Furthermore, the invention relates to novel crystalline L-arabinose.

ST sepn process

IT Filtration
(nanofiltration; separation process)

IT Acacia seyal
Dietary fiber
(separation process)

IT 97444-70-7, Gum Seyal
RL: NUU (Other use, unclassified); PEP (Physical, engineering or chemical process); PYP (Physical process); PROC (Process); USES (Uses)
(Valspray F; separation process)

IT 59-23-4, Galactose, analysis 3458-28-4, Mannose 3615-41-6, L-Rhamnose 5328-37-0, L-Arabinose
RL: ANT (Analyte); PEP (Physical, engineering or chemical process); PYP (Physical process); ANST (Analytical study); PROC (Process)
(separation process)

IT 9000-01-5, Gum arabic 9000-28-6, Gum ghatti 850723-35-2, Valcoat VM 960
RL: NUU (Other use, unclassified); PEP (Physical, engineering or chemical process); PYP (Physical process); PROC (Process); USES (Uses)
(separation process)

=> b reg
FILE 'REGISTRY' ENTERED AT 13:22:28 ON 20 JUL 2005

Property values tagged with IC are from the ZIC/VINITI data file provided by InfoChem.

STRUCTURE FILE UPDATES: 19 JUL 2005 HIGHEST RN 856046-16-7
DICTIONARY FILE UPDATES: 19 JUL 2005 HIGHEST RN 856046-16-7

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TSCA INFORMATION NOW CURRENT THROUGH JANUARY 18, 2005

Search done by Noble Jarrell

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conducting SmartSELECT searches.

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* *
* The CA roles and document type information have been removed from *
* the IDE default display format and the ED field has been added, *
* effective March 20, 2005. A new display format, IDERL, is now *
* available and contains the CA role and document type information. *
* *
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Structure search iteration limits have been increased. See HELP SLIMITS
for details.

Experimental and calculated property data are now available. For more
information enter HELP PROP at an arrow prompt in the file or refer
to the file summary sheet on the web at:
http://www.cas.org/ONLINE/DBSS/registryss.html

=> d ide l3 tot

L3 ANSWER 1 OF 8 REGISTRY COPYRIGHT 2005 ACS on STN
RN 850723-35-2 REGISTRY
ED Entered STN: 19 May 2005
CN Valcoat VM 960 (9CI) (CA INDEX NAME)
ENTE A gum (Valmar S.A.)
MF Unspecified
CI MAN
SR CA
LC STN Files: CA, CAPLUS, USPATFULL

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***
1 REFERENCES IN FILE CA (1907 TO DATE)
1 REFERENCES IN FILE CAPLUS (1907 TO DATE)

L3 ANSWER 2 OF 8 REGISTRY COPYRIGHT 2005 ACS on STN
RN 97444-70-7 REGISTRY
ED Entered STN: 04 Aug 1985
CN Seyal gum (9CI) (CA INDEX NAME)
OTHER NAMES:
CN Gum Acacia Seyal
CN Gum Seyal
CN Gum talha
CN Gums, Acacia seyal
CN Talha gum
CN Valspray F
MF Unspecified
CI MAN
SR CA
LC STN Files: AGRICOLA, BIOBUSINESS, CA, CAPLUS, TOXCENTER, USPAT2,
USPATFULL

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***
28 REFERENCES IN FILE CA (1907 TO DATE)
28 REFERENCES IN FILE CAPLUS (1907 TO DATE)

L3 ANSWER 3 OF 8 REGISTRY COPYRIGHT 2005 ACS on STN
RN 9000-28-6 REGISTRY
ED Entered STN: 16 Nov 1984
CN Gum ghatti (9CI) (CA INDEX NAME)
OTHER NAMES:
CN Anogeissus gum
CN Dhavda gum
CN Dhow gum
CN Ghatti

Search done by Noble Jarrell

CN Ghatti gum
CN Gums, ghatti
CN Indian gum
DR 37187-65-8
MF Unspecified
CI PMS, COM, MAN
PCT Manual registration
LC STN Files: AGRICOLA, BIOBUSINESS, BIOSIS, CA, CAPLUS, CHEMCATS, CHEMLIST, CIN, CSCHEM, IFICDB, IFIPAT, IFIUDB, MEDLINE, MRCK*, MSDS-OHS, NAPRALERT, PIRA, PROMT, RTECS*, TOXCENTER, USPAT2, USPATFULL
(*File contains numerically searchable property data)
Other Sources: DSL**, EINECS**, TSCA**
(**Enter CHEMLIST File for up-to-date regulatory information)

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***

PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT

420 REFERENCES IN FILE CA (1907 TO DATE)
22 REFERENCES TO NON-SPECIFIC DERIVATIVES IN FILE CA
420 REFERENCES IN FILE CAPLUS (1907 TO DATE)

L3 ANSWER 4 OF 8 REGISTRY COPYRIGHT 2005 ACS on STN
RN 9000-01-5 REGISTRY
ED Entered STN: 16 Nov 1984
CN Gum arabic (8CI, 9CI) (CA INDEX NAME)
OTHER NAMES:
CN 4685H
CN Acacia ampliceps gum
CN Acacia dealbata gum
CN Acacia fragilis gum
CN Acacia gum
CN Acacia leptopetala gum
CN Acacia ligulata gum
CN Acacia meisneri gum
CN Acacia pruinocarpa gum
CN Acacia salicina gum
CN Acacia senegal gum
CN Acacia syrup
CN Acacia victoriae gum
CN Arabic Cool
CN Arabic Cool SS
CN Arabic gum
CN Arabicum rubber
CN Australian gum
CN BEV 202
CN Cape gum
CN E 414
CN FiberGum AS
CN Fibergum AS-IRX
CN Fibregum
CN Fibregum P
CN Gum acacia
CN Gum ovaline
CN Gum senegal
CN Gum thala
CN Gums, acacia
CN Gundar gum
CN Indian gum
CN Instangum IRX
CN Instant Gum AS-IRX 40830
CN Instant Gum IRX 40693
CN Khair gum
CN Kordofan gum
CN Maklai gum
CN MS 1

Search done by Noble Jarrell

CN MS 1 (gum)
CN Neosoft AB
CN Senegal gum
CN Spraygum
CN Starsol No.1
CN Technogum IRX 602000
CN VIS TOP D 2041
CN Wattle gum
DR 8047-37-8, 8047-38-9, 37316-55-5, 37316-56-6, 39378-44-4, 39378-45-5
MF Unspecified
CI PMS, COM, MAN
PCT Manual registration
LC STN Files: AGRICOLA, ANABSTR, BIOBUSINESS, BIOSIS, BIOTECHNO, CA, CABA, CANCERLIT, CAPLUS, CASREACT, CBNB, CEN, CHEMCATS, CHEMLIST, CIN, CSCHEM, CSNB, DDFU, DETHERM*, DRUGU, EMBASE, HSDB*, IFICDB, IFIPAT, IFIUDB, IPA, MEDLINE, MRCK*, MSDS-OHS, NAPRALERT, NIOSHTIC, PDLCOM*, PIRA, PROMT, RTECS*, TOXCENTER, USAN, USPAT2, USPATFULL
(*File contains numerically searchable property data)
Other Sources: DSL**, EINECS**, TSCA**
(**Enter CHEMLIST File for up-to-date regulatory information)

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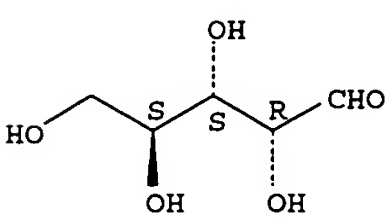
6017 REFERENCES IN FILE CA (1907 TO DATE)
97 REFERENCES TO NON-SPECIFIC DERIVATIVES IN FILE CA
6027 REFERENCES IN FILE CAPLUS (1907 TO DATE)

L3 ANSWER 5 OF 8 REGISTRY COPYRIGHT 2005 ACS on STN
RN 5328-37-0 REGISTRY
ED Entered STN: 16 Nov 1984
CN L-Arabinose (9CI) (CA INDEX NAME)
OTHER CA INDEX NAMES:
CN Arabinose, L- (8CI)
OTHER NAMES:
CN (+)-Arabinose
CN L-(+)-Arabinose
CN NSC 1941
FS STEREOSEARCH
MF C5 H10 O5
CI COM
LC STN Files: AGRICOLA, ANABSTR, BEILSTEIN*, BIOBUSINESS, BIOSIS, CA, CAPLUS, CASREACT, CEN, CHEMCATS, CHEMINFORMRX, CHEMLIST, CIN, CSCHEM, GMELIN*, IFICDB, IFIPAT, IFIUDB, IPA, MSDS-OHS, NAPRALERT, PIRA, PROMT, SPECINFO, TOXCENTER, USPAT2, USPATFULL
(*File contains numerically searchable property data)
Other Sources: DSL**, EINECS**, TSCA**
(**Enter CHEMLIST File for up-to-date regulatory information)

Absolute stereochemistry.



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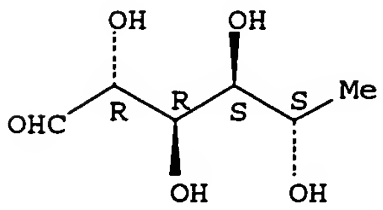
48 REFERENCES TO NON-SPECIFIC DERIVATIVES IN FILE CA
2295 REFERENCES IN FILE CAPLUS (1907 TO DATE)

Search done by Noble Jarrell

L3 ANSWER 6 OF 8 REGISTRY COPYRIGHT 2005 ACS on STN
RN 3615-41-6 REGISTRY
ED Entered STN: 16 Nov 1984
CN L-Mannose, 6-deoxy- (9CI) (CA INDEX NAME)
OTHER CA INDEX NAMES:
CN Rhamnose, L- (6CI, 8CI)
OTHER NAMES:
CN 6-Deoxy-L-mannose
CN Isodulcit
CN Isodulcitol
CN L-Mannomethylose
CN L-Rhamnose
CN Locaose
CN NSC 2056
CN Rhamnose
AR 73-34-7, 10485-94-6
FS STEREOSEARCH
DR 4469-18-5
MF C6 H12 O5
CI COM
LC STN Files: ADISNEWS, AGRICOLA, BEILSTEIN*, BIOBUSINESS, BIOSIS, BIOTECHNO, CA, CAOLD, CAPLUS, CASREACT, CEN, CHEMCATS, CHEMINFORMRX, CHEMLIST, CIN, CSCHEM, DDFU, DRUGU, EMBASE, IFICDB, IFIPAT, IFIUDB, MEDLINE, MRCK*, NAPRALERT, PIRA, PROMT, SPECINFO, TOXCENTER, TULSA, USPAT2, USPATFULL
(*File contains numerically searchable property data)
Other Sources: DSL**, EINECS**, TSCA**
(**Enter CHEMLIST File for up-to-date regulatory information)

Absolute stereochemistry.



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121 REFERENCES TO NON-SPECIFIC DERIVATIVES IN FILE CA
5278 REFERENCES IN FILE CAPLUS (1907 TO DATE)
5 REFERENCES IN FILE CAOLD (PRIOR TO 1967)

L3 ANSWER 7 OF 8 REGISTRY COPYRIGHT 2005 ACS on STN
RN 3458-28-4 REGISTRY
ED Entered STN: 16 Nov 1984
CN D-Mannose (9CI) (CA INDEX NAME)
OTHER CA INDEX NAMES:
CN Mannose, D- (8CI)
OTHER NAMES:
CN (+)-Mannose
CN Carubinose
CN D(+)-Mannose
CN Mannose
CN NSC 26247
CN Seminose
AR 530-26-7
FS STEREOSEARCH
DR 147-74-0

Search done by Noble Jarrell

MF C6 H12 O6
CI COM
LC STN Files: ADISNEWS, AGRICOLA, BEILSTEIN*, BIOBUSINESS, BIOSIS, BIOTECHNO, CA, CABA, CAOLD, CAPLUS, CASREACT, CEN, CHEMCATS, CHEMINFORMRX, CHEMLIST, CIN, CSCHEM, DETHERM*, EMBASE, GMELIN*, HODOC*, IFICDB, IFIPAT, IFIUDB, IPA, MEDLINE, MRCK*, MSDS-OHS, NAPRALERT, NIOSHTIC, PIRA, PROMT, SPECINFO, SYNTHLINE, TOXCENTER, TULSA, USPAT2, USPATFULL
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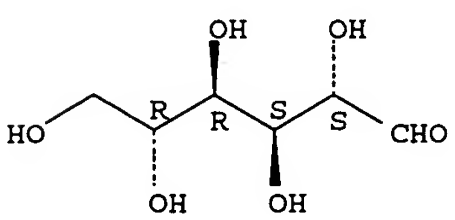
Other Sources: DSL**, EINECS**, TSCA**
(**Enter CHEMLIST File for up-to-date regulatory information)

Absolute stereochemistry. Rotation (+).



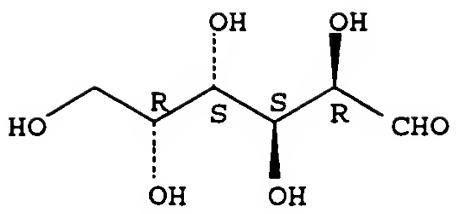
PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT

14430 REFERENCES IN FILE CA (1907 TO DATE)
681 REFERENCES TO NON-SPECIFIC DERIVATIVES IN FILE CA
14454 REFERENCES IN FILE CAPLUS (1907 TO DATE)
7 REFERENCES IN FILE CAOLD (PRIOR TO 1967)

L3 ANSWER 8 OF 8 REGISTRY COPYRIGHT 2005 ACS on STN
RN 59-23-4 REGISTRY
ED Entered STN: 16 Nov 1984
CN D-Galactose (9CI) (CA INDEX NAME)
OTHER CA INDEX NAMES:
CN Galactose, D- (8CI)
OTHER NAMES:
CN (+)-Galactose
CN D-(+)-Galactose
CN Galactose
FS STEREOSEARCH
DR 790999-92-7, 147-76-2, 3812-56-4, 400876-94-0
MF C6 H12 O6
CI COM
LC STN Files: ADISNEWS, AGRICOLA, ANABSTR, BEILSTEIN*, BIOBUSINESS, BIOSIS, BIOTECHNO, CA, CABA, CAOLD, CAPLUS, CASREACT, CBNB, CEN, CHEMCATS, CHEMINFORMRX, CHEMLIST, CIN, CSCHEM, DDFU, DETHERM*, DIOGENES, DRUGU, EMBASE, GMELIN*, HODOC*, IFICDB, IFIPAT, IFIUDB, IPA, MEDLINE, MRCK*, MSDS-OHS, NAPRALERT, NIOSHTIC, PATDPASPC, PIRA, PROMT, RTECS*, SPECINFO, TOXCENTER, TULSA, USPAT2, USPATFULL, VETU
(*File contains numerically searchable property data)
Other Sources: DSL**, EINECS**, TSCA**
(**Enter CHEMLIST File for up-to-date regulatory information)

Absolute stereochemistry. Rotation (+).

Search done by Noble Jarrell



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828 REFERENCES TO NON-SPECIFIC DERIVATIVES IN FILE CA
22686 REFERENCES IN FILE CAPLUS (1907 TO DATE)
2 REFERENCES IN FILE CAOLD (PRIOR TO 1967)

=> b wpix

FILE 'WPIX' ENTERED AT 13:22:43 ON 20 JUL 2005
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FILE LAST UPDATED: 15 JUL 2005 <20050715/UP>
MOST RECENT DERWENT UPDATE: 200545 <200545/DW>
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FOR DETAILS. <<<
'BIX BI,ABEX' IS DEFAULT SEARCH FIELD FOR 'WPIX' FILE

=> d all drn dcn ple l4 tot

L4 ANSWER 1 OF 1 WPIX COPYRIGHT 2005 THE THOMSON CORP on STN
AN 2005-332112 [34] WPIX
DNC C2005-103281
TI Recovering arabinose from vegetable fiber for use in pharmaceuticals and foodstuffs involves controlled hydrolysis of the vegetable fiber followed by fractionation by chromatography or membrane filtration and crystallization.
DC B03 D13
IN HEIKKILA, H; KOIVIKKO, H; LEWANDOWSKI, J; LINDROOS, M; MATTILA, J; NURMI, J; NURMI, N; SAARI, P; SARMALA, P; HEIKKILAE, H
PA (HEIK-I) HEIKKILA H; (KOIV-I) KOIVIKKO H; (LEWA-I) LEWANDOWSKI J; (LIND-I) LINDROOS M; (MATT-I) MATTILA J; (NURM-I) NURMI J; (NURM-I) NURMI N; (SAAR-I) SAARI P; (SARM-I) SARMALA P; (DANI-N) DANISCO SWEETENERS OY
CYC 108
PI US 2005096464 A1 20050505 (200534)* 29 C07H001-08 <--

Search done by Noble Jarrell

WO 2005042788 A1 20050512 (200534) EN C13K013-00
RW: AT BE BG BW CH CY CZ DE DK EA EE ES FI FR GB GH GM GR HU IE IT KE
LS LU MC MW MZ NA NL OA PL PT RO SD SE SI SK SL SZ TR TZ UG ZM ZW
W: AE AG AL AM AT AU AZ BA BB BG BR BW BY BZ CA CH CN CO CR CU CZ DE
DK DM DZ EC EE EG ES FI GB GD GE GH GM HR HU ID IL IN IS JP KE KG
KP KR KZ LC LK LR LS LT LU LV MA MD MG MK MN MW MX MZ NA NI NO NZ
OM PG PH PL PT RO RU SC SD SE SG SK SL SY TJ TM TN TR TT TZ UA UG
US UZ VC VN YU ZA ZM ZW

ADT US 2005096464 A1 US 2003-697763 20031030; WO 2005042788 A1 WO 2004-FI641 20041029

PRAI US 2003-697763 20031030

IC ICM C07H001-08; C13K013-00

AB US2005096464 A UPAB: 20050527

NOVELTY - Recovering arabinose and optionally at least one of galactose, rhamnose or mannose from vegetable fiber rich in heteropolymeric arabinose involves controlled hydrolysis of the vegetable fiber in an aqueous solution to produce an aqueous hydrolyzate containing arabinose and at least one of galactose, rhamnose and mannose; fractionation of the hydrolyzate and crystallization of arabinose.

DETAILED DESCRIPTION - Recovery of arabinose and optionally at least one other monosaccharide (M1) selected from galactose, rhamnose and mannose from vegetable fiber rich in heteropolymeric arabinose involves:

(a) controlled hydrolysis of the vegetable fiber in an aqueous solution to produce an aqueous hydrolyzate containing arabinose, (M1), and optionally poly-, oligo- and/or disaccharides;

(b) optional neutralization of the aqueous hydrolyzate followed by at least one of the following steps (c) and (d);

(c) fractionation of the aqueous hydrolyzate to obtain a fraction enriched in arabinose, at least one other fraction selected from a fraction enriched in galactose, a fraction enriched in rhamnose and a fraction enriched in mannose, and optionally at least one fraction enriched in poly-, oligo- and/or disaccharides, followed by the recovery of the fraction enriched in arabinose and optionally at least one of the other fractions; and

(d) crystallization of arabinose.

An INDEPENDENT CLAIM is included for crystalline L-arabinose based on vegetable fiber as new.

ACTIVITY - Antidiabetic.

MECHANISM OF ACTION - None given.

USE - Recovering arabinose (e.g. L-arabinose) and optionally at least one of galactose, rhamnose or mannose from vegetable fiber rich in heteropolymeric arabinose for use in pharmaceuticals and foodstuffs e.g. diet foodstuffs and diabetic foodstuffs (claimed); in preventing and treating hyperglycemia and a remedy for diabetes mellitus.

ADVANTAGE - The obtained crystalline arabinose product has a purity of more than 60 (preferably more than 90, especially more than 99.5)% on DS. The crystalline L-arabinose contains less than 0.5 (preferably less than 0.2)% galactose on DS. The arabinose is separated and crystallized with high purity from arabinose-rich sources without significant disturbing effects of galactose. The whole process for the recovery of arabinose and optionally other monosaccharides and further products is carried out in an aqueous solution without the use of organic solvents. The process is carried out with fewer process steps than in the known processes for recovering arabinose. The arabinose is obtained by crystallization step and without dissolving and recrystallization steps.

Dwg.0/6

FS CPI

FA AB; DCN

MC CPI: B10-A07A; B14-F09; B14-S04; D03-H01T2

DRN 1161-P; 1161-U; 1616-P; 1616-U; 1714-U

M2 *01* DCN: R01616-K; R01616-T; R01616-P; R01616-P

M2 *02* DCN: RAHS00-K; RAHS00-T; RAHS00-P; RAHS00-P

M2 *03* DCN: RAHRZY-K; RAHRZY-T; RAHRZY-P; RAHRZY-P

M2 *04* DCN: R01161-K; R01161-T; R01161-P; R01161-P

M2 *05* DCN: RACTRE-K; RACTRE-T; RACTRE-P; RACTRE-P

M2 *06* DCN: R01714-K; R01714-U; R07673-K; R07673-U

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=> d his full

     (FILE 'HOME' ENTERED AT 07:01:04 ON 21 JUL 2005)

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                  C10-A07)/MC OR "L811"/M0,M1,M2,M3,M4,M5,M6
L2           1727 SEA ABB=ON  PLU=ON  ARABINOSE?/BIX,BI,ABEX
L3         193208 SEA ABB=ON  PLU=ON  (J01-A? OR D05-D OR J04-B01C OR J01-D01?
                  OR B11-C08D2 OR C11-C08D2)/MC OR N16?/M0,M1,M2,M3,M4,M5,M6 OR
                  (B01D003 OR B01D015-08)/IPC
L4           4595 SEA ABB=ON  PLU=ON  J01-B/MC OR B01D009/IPC
                  E HEIKKILA H/AU
L5             61 SEA ABB=ON  PLU=ON  ("HEIKKILA H"/AU OR "HEIKKILA H K"/AU OR
                  "HEIKKILA H O"/AU)
                  E KOIVIKKO H/AU
L6             16 SEA ABB=ON  PLU=ON  ("KOIVIKKO H"/AU OR "KOIVIKKO H T"/AU)
                  E NURMI J/AU
L7             63 SEA ABB=ON  PLU=ON  ("NURMI J"/AU OR "NURMI J H"/AU OR "NURMI
                  J J"/AU OR "NURMI J K J"/AU OR "NURMI J V"/AU)
                  E SAARI P/AU
L8             10 SEA ABB=ON  PLU=ON  ("SAARI P"/AU OR "SAARI P J"/AU OR "SAARI
                  P M"/AU)
                  E NURMI N/AU
L9              5 SEA ABB=ON  PLU=ON  "NURMI N"/AU
                  E SARMALA P/AU
L10             7 SEA ABB=ON  PLU=ON  ("SARMALA P"/AU OR "SARMAN P J"/AU)
                  E LINDROOS M/AU
L11            22 SEA ABB=ON  PLU=ON  ("LINDROOS M"/AU OR "LINDROOS M E"/AU)
                  E LEWANDOWSKI J/AU
L12            38 SEA ABB=ON  PLU=ON  ("LEWANDOWSKI J"/AU OR "LEWANDOWSKI J
                  J"/AU OR "LEWANDOWSKI J K"/AU OR "LEWANDOWSKI J L"/AU OR
                  "LEWANDOWSKI J T"/AU)
                  E DANISCO/CS,PA
L13           357 SEA ABB=ON  PLU=ON  DANISCO/CS,PA
L14            10 SEA ABB=ON  PLU=ON  L1 AND L3 AND L4
L15             1 SEA ABB=ON  PLU=ON  L14 AND L2
L16             1 SEA ABB=ON  PLU=ON  L14 AND (L5 OR L6 OR L7 OR L8 OR L9 OR L10
                  OR L11 OR L12 OR L13)
L17             9 SEA ABB=ON  PLU=ON  L14 NOT L16
L18             1 SEA ABB=ON  PLU=ON  L15 AND (L5 OR L6 OR L7 OR L8 OR L9 OR L10
                  OR L11 OR L12 OR L13)
L19             1 SEA ABB=ON  PLU=ON  L16 OR L18
L20         50800 SEA ABB=ON  PLU=ON  (J01-A? OR D05-D OR J04-B01C OR J01-D01?
                  OR B11-C08D2 OR C11-C08D2)/MC OR (B01D003 OR B01D015-08)/IPC
                  E ARABINOSE/CN
L21             7 SEA ABB=ON  PLU=ON  (ARABINOSE/CN OR "ARABINOSE, D-"/CN OR
                  "ARABINOSE, L-"/CN OR "ARABINOSE,ALPHA-D-"/CN OR "ARABINOSE,ALP
                  HA-L-"/CN OR "ARABINOSE,BETA-D-"/CN OR "ARABINOSE,BETA-L-"/CN)
L22           190 SEA ABB=ON  PLU=ON  (L1 OR L21) AND L20
L23             1 SEA ABB=ON  PLU=ON  L22 AND L4
L24          1906 SEA ABB=ON  PLU=ON  (L1 OR L21) AND ((B11-B OR C11-B)/MC OR
                  N16?/M0,M1,M2,M3,M4,M5,M6)
L25            96 SEA ABB=ON  PLU=ON  L24 AND L2
L26            28 SEA ABB=ON  PLU=ON  L25 AND ?FRACTION?/BIX,BI,ABEX
L27             7 SEA ABB=ON  PLU=ON  (L5 OR L6 OR L7 OR L8 OR L9 OR L10 OR L11
                  OR L12 OR L13) AND L26
L28            21 SEA ABB=ON  PLU=ON  L26 NOT L27
L29             4 SEA ABB=ON  PLU=ON  (1988-214129/AN OR 2000-105567/AN OR
                  2002-268859/AN OR 2004-106459/AN) AND L28
L30             8 SEA ABB=ON  PLU=ON  L19 OR L27

=> b wpix
FILE 'WPIX' ENTERED AT 07:52:22 ON 21 JUL 2005
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FILE LAST UPDATED: 20 JUL 2005 <20050720/UP>
MOST RECENT DERWENT UPDATE: 200546 <200546/DW>
DERWENT WORLD PATENTS INDEX SUBSCRIBER FILE, COVERS 1963 TO DATE

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'BIX BI,ABEX' IS DEFAULT SEARCH FIELD FOR 'WPIX' FILE

=> d all l30 tot

L30 ANSWER 1 OF 8 WPIX COPYRIGHT 2005 THE THOMSON CORP on STN
AN 2005-332112 [34] WPIX
DNC C2005-103281
TI Recovering **arabinose** from vegetable fiber for use in pharmaceuticals and foodstuffs involves controlled hydrolysis of the vegetable fiber followed by **fractionation** by chromatography or membrane filtration and crystallization.
DC B03 D13
IN **HEIKKILA, H**; **KOIVIKKO, H**; **LEWANDOWSKI, J**; **LINDROOS, M**; MATTILA, J; **NURMI, J**; **NURMI, N**; **SAARI, P**; **SARMALA, P**; HEIKKILAE, H
PA (HEIK-I) HEIKKILA H; (KOIV-I) KOIVIKKO H; (LEWA-I) LEWANDOWSKI J; (LIND-I) LINDROOS M; (MATT-I) MATTILA J; (NURM-I) NURMI J; (NURM-I) NURMI N; (SAAR-I) SAARI P; (SARM-I) SARMALA P; (DANI-N) **DANISCO SWEETENERS OY**
CYC 108
PI US 2005096464 A1 20050505 (200534)* 29 C07H001-08
WO 2005042788 A1 20050512 (200534) EN C13K013-00
RW: AT BE BG BW CH CY CZ DE DK EA EE ES FI FR GB GH GM GR HU IE IT KE LS LU MC MW MZ NA NL OA PL PT RO SD SE SI SK SL SZ TR TZ UG ZM ZW
W: AE AG AL AM AT AU AZ BA BB BG BR BW BY BZ CA CH CN CO CR CU CZ DE DK DM DZ EC EE EG ES FI GB GD GE GH GM HR HU ID IL IN IS JP KE KG KP KR KZ LC LK LR LS LT LU LV MA MD MG MK MN MW MX MZ NA NI NO NZ OM PG PH PL PT RO RU SC SD SE SG SK SL SY TJ TM TN TR TT TZ UA UG US UZ VC VN YU ZA ZM ZW
ADT US 2005096464 A1 US 2003-697763 20031030; WO 2005042788 A1 WO 2004-FI641 20041029
PRAI US 2003-697763 20031030
IC ICM C07H001-08; C13K013-00
AB US2005096464 A UPAB: 20050527
NOVELTY - Recovering **arabinose** and optionally at least one of galactose, rhamnose or mannose from vegetable fiber rich in heteropolymeric **arabinose** involves controlled hydrolysis of the vegetable fiber in an aqueous solution to produce an aqueous hydrolyzate containing **arabinose** and at least one of galactose, rhamnose and mannose; **fractionation** of the hydrolyzate and crystallization of **arabinose**.
DETAILED DESCRIPTION - Recovery of **arabinose** and optionally

my application

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at least one other monosaccharide (M1) selected from galactose, rhamnose and mannose from vegetable fiber rich in heteropolymeric **arabinose** involves:

(a) controlled hydrolysis of the vegetable fiber in an aqueous solution to produce an aqueous hydrolyzate containing **arabinose**, (M1), and optionally poly-, oligo- and/or disaccharides;

(b) optional neutralization of the aqueous hydrolyzate followed by at least one of the following steps (c) and (d);

(c) **fractionation** of the aqueous hydrolyzate to obtain a **fraction** enriched in **arabinose**, at least one other **fraction** selected from a **fraction** enriched in galactose, a **fraction** enriched in rhamnose and a **fraction** enriched in mannose, and optionally at least one **fraction** enriched in poly-, oligo- and/or disaccharides, followed by the recovery of the **fraction** enriched in **arabinose** and optionally at least one of the other **fractions**; and

(d) crystallization of **arabinose**.

An INDEPENDENT CLAIM is included for crystalline L-**arabinose** based on vegetable fiber as new.

ACTIVITY - Antidiabetic.

MECHANISM OF ACTION - None given.

USE - Recovering **arabinose** (e.g. L-**arabinose**) and optionally at least one of galactose, rhamnose or mannose from vegetable fiber rich in heteropolymeric **arabinose** for use in pharmaceuticals and foodstuffs e.g. diet foodstuffs and diabetic foodstuffs (claimed); in preventing and treating hyperglycemia and a remedy for diabetes mellitus.

ADVANTAGE - The obtained crystalline **arabinose** product has a purity of more than 60 (preferably more than 90, especially more than 99.5)% on DS. The crystalline L-**arabinose** contains less than 0.5 (preferably less than 0.2)% galactose on DS. The **arabinose** is separated and crystallized with high purity from **arabinose**-rich sources without significant disturbing effects of galactose. The whole process for the recovery of **arabinose** and optionally other monosaccharides and further products is carried out in an aqueous solution without the use of organic solvents. The process is carried out with fewer process steps than in the known processes for recovering **arabinose** . The **arabinose** is obtained by crystallization step and without dissolving and recrystallization steps.

Dwg.0/6

FS CPI
FA AB; DCN
MC CPI: B10-A07A; B14-F09; B14-S04; D03-H01T2

L30 ANSWER 2 OF 8 WPIX COPYRIGHT 2005 THE THOMSON CORP on STN
AN 2005-324462 [34] WPIX
DNC C2005-101367
TI Recovering **arabinose** from vegetable fiber for use in pharmaceuticals and foodstuffs involves controlled hydrolysis of the vegetable fiber followed by **fractionation** by chromatography or membrane filtration and crystallization.
DC B03 D13 D17 E13
IN **HEIKKILAE, H; KOIVIKKO, H; LEWANDOWSKI, J; LINDROOS, M; MATTILA, J; NURMI, J; NURMI, N; SAARI, P; SARMALA, P**
PA (DANI-N) **DANISCO SWEETENERS OY**
CYC 1
PI GB 2407573 A 20050504 (200534)* 70 C07H001-08
ADT GB 2407573 A GB 2003-25367 20031030
PRAI GB 2003-25367 20031030
IC ICM C07H001-08
ICS C07H003-02; C13K013-00
AB GB 2407573 A UPAB: 20050527
NOVELTY - Recovering **arabinose** and optionally at least one of galactose, rhamnose or mannose from vegetable fiber rich in heteropolymeric **arabinose** involves controlled hydrolysis of the

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vegetable fiber in an aqueous solution to produce an aqueous hydrolyzate; optional neutralization; **fractionation** of the aqueous hydrolyzate to obtain **fraction**; and crystallization of **arabinose**.

DETAILED DESCRIPTION - Recovery of **arabinose** and optionally at least one other monosaccharide (M1) selected from galactose, rhamnose and mannose from vegetable fiber rich in heteropolymeric **arabinose** involves:

(a) controlled hydrolysis of the vegetable fiber in an aqueous solution to produce an aqueous hydrolyzate containing **arabinose**, (M1), and optionally poly-, oligo- and/or disaccharides;

(b) optional neutralization of the aqueous hydrolysate followed by at least one of the following steps (c) and (d);

(c) **fractionation** of the aqueous hydrolyzate to obtain a **fraction** enriched in **arabinose**, at least one other **fraction** selected from a **fraction** enriched in galactose, a **fraction** enriched in rhamnose and a **fraction** enriched in mannose, and optionally at least one **fraction** enriched in poly-, oligo- and/or disaccharides, followed by the recovery of the **fraction** enriched in **arabinose** and optionally at least one of the other **fractions**; and

(d) crystallization of **arabinose**.

INDEPENDENT CLAIMS are included for:

(1) crystalline L-**arabinose** produced by above method; and

(2) crystalline L-**arabinose** based on vegetable fiber as new.

ACTIVITY - Antidiabetic.

MECHANISM OF ACTION - None given.

USE - Recovering **arabinose** (e.g. L-**arabinose**) and optionally at least one of galactose, rhamnose or mannose from vegetable fiber rich in heteropolymeric **arabinose** for use in pharmaceuticals and foodstuffs e.g. diet foodstuffs and diabetic foodstuffs (claimed); in preventing and treating hyperglycemia and a remedy for diabetes mellitus.

ADVANTAGE - The obtained crystalline **arabinose** product has a purity of more than 60 (preferably more than 90, especially more than 99.5)% on DS. The crystalline L-**arabinose** contains less than 0.5 (preferably less than 0.2)% galactose on DS. The **arabinose** is separated and crystallized with high purity from **arabinose**-rich sources without significant disturbing effects of galactose. The whole process for the recovery of **arabinose** and optionally other monosaccharides and further products is carried out in an aqueous solution without the use of organic solvents. The process is carried out with fewer process steps than in the known processes for recovering **arabinose** . The **arabinose** is obtained by crystallization step and without dissolving and recrystallization steps.

Dwg.0/6

FS. CPI
FA AB; DCN
MC CPI: B10-A07A; **B11-B**; B11-C08D2; B12-K04A; B14-F09; B14-S04; D03-H01T1; D03-H01T2; D06-A; D06-C; E10-A07A; E11-Q01A

L30 ANSWER 3 OF 8 WPIX COPYRIGHT 2005 THE THOMSON CORP on STN
AN 2003-460306 [44] WPIX
DNC C2003-122565
TI Crystallization of component(s) of multi-component system involves subjecting liquid system containing at least two components from sugar and sugar alcohol compounds to melt layer crystallization.
DC B07 D13 D17
IN GIULIETTI, M; **HEIKKILA, H**; **LINDROOS, M**; LUEDECKE, U; PETERS-ERJAWETZ, S; SECKLER, M; ULRICH, J; HEIKKILAE, H
PA (DANI-N) **DANISCO SWEETENERS OY**
CYC 1
PI GB 2382038 A 20030521 (200344)* 18 C13K013-00
GB 2382038 B 20050406 (200524) C13K013-00
ADT GB 2382038 A GB 2002-22387 20020926; GB 2382038 B GB 2002-22387 20020926

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PRAI FI 2001-1907 20010928
IC ICM C13K013-00
ICS B01D009-00; C13F001-02; C30B029-54
AB GB 2382038 A UPAB: 20030710
NOVELTY - A component of a multi-component system is crystallized by subjecting a liquid system containing at least two components from sugar and sugar alcohol compounds to a melt layer crystallization to cause crystallization of the sugar and/or sugar alcohol components on a cooled surface; and recovering the resulting crystals from the remaining liquid system.
USE - For crystallization of a component of a multi-component system (claimed).
Dwg.0/0
FS CPI
FA AB; DCN
MC CPI: B04-C02X; B07-A02; B10-A07; B11-B; D03-E; D03-E08; D03-E09; D03-H01; D03-H01A; D03-H01T2; D06-C; D06-G

L30 ANSWER 4 OF 8 WPIX COPYRIGHT 2005 THE THOMSON CORP on STN
AN 2002-643304 [69] WPIX
CR 2002-636496 [68]; 2002-674777 [72]
DNC C2004-014168
TI Separation of compounds of different molar mass involves nanofiltration of solution comprising compounds of preset molar mass to form fraction of compounds with respective molar mass which are recovered separately.
DC A88 B05 D17 E19 J01
IN HEIKKILA, H; KOIVIKKO, H; LINDROOS, M; MANTTARI, M; NYSTROM, M; PAANANEN, H; PUUPPO, O; HEIKKILAE, H; MAENTTAERI, M; NYSTROEM, M; MATTARI, M; NYLSTROM, M
PA (DANI-N) DANISCO SWEETENERS OY; (HEIK-I) HEIKKILA H; (KOIV-I) KOIVIKKO H; (LIND-I) LINDROOS M; (MANT-I) MANTTARI M; (NYST-I) NYSTROM M; (PAAN-I) PAANANEN H; (PUUP-I) PUUPPO O; (DANI-N) DANISKO SWEETENERS OY
CYC 101
PI WO 2002053781 A1 20020711 (200269)* EN 48 C13K000-00
RW: AT BE CH CY DE DK EA ES FI FR GB GH GM GR IE IT KE LS LU MC MW MZ NL OA PT SD SE SL SZ TR TZ UG ZM ZW
W: AE AG AL AM AT AU AZ BA BB BG BR BY BZ CA CH CN CO CR CU CZ DE DK DM DZ EC EE ES FI GB GD GE GH GM HR HU ID IL IN IS JP KE KG KP KR KZ LC LK LR LS LT LU LV MA MD MG MK MN MW MX MZ NO NZ OM PH PL PT RO RU SD SE SG SI SK SL TJ TM TN TR TT TZ UA UG US UZ VN YU ZA ZM ZW
FI 2000002865 A 20020629 (200269) C13K000-00
FI 2000002866 A 20020629 (200269) C13K000-00
US 2002158021 A1 20021031 (200274) B01D061-00
ZA 2002000014 A 20020925 (200275) 33 C13F000-00
EP 1366198 A1 20031203 (200380) EN C13K001-00
R: AL AT BE CH CY DE DK ES FI FR GB GR IE IT LI LT LU LV MC MK NL PT RO SE SI TR
US 6692577 B2 20040217 (200413) C08B030-00
US 2004060868 A1 20040401 (200424) B01D061-00
AU 2002225073 A1 20020716 (200427) C13K000-00
KR 2004008121 A 20040128 (200435) C07H001-06
CN 1483085 A 20040317 (200437) C13K011-00
JP 2004519321 W 20040702 (200443) 80 B01D061-14
ADT WO 2002053781 A1 WO 2001-FI1155 20011228; FI 2000002865 A FI 2000-2865 20001228; FI 2000002866 A FI 2000-2866 20001228; US 2002158021 A1 US 2001-34597 20011228; ZA 2002000014 A ZA 2002-14 20020102; EP 1366198 A1 EP 2001-994869 20011228, WO 2001-FI1155 20011228; US 6692577 B2 US 2001-34597 20011228; US 2004060868 A1 WO 2001-FI1155 20011228, US 2003-451859 20030625; AU 2002225073 A1 AU 2002-225073 20011228; KR 2004008121 A KR 2003-708814 20030627; CN 1483085 A CN 2001-821499 20011228; JP 2004519321 W WO 2001-FI1155 20011228, JP 2002-555284 20011228
FDT EP 1366198 A1 Based on WO 2002053781; AU 2002225073 A1 Based on WO 2002053781; JP 2004519321 W Based on WO 2002053781
PRAI FI 2000-2866 20001228; FI 2000-2865 20001228

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IC ICM B01D061-00; B01D061-14; C07H001-06; C08B030-00; C13F000-00; C13K000-00; C13K001-00; C13K011-00
ICS B01D015-00; B01D015-08; B01D061-02; B01D071-12; B01D071-38; B01D071-48; B01D071-56; B01D071-62; B01D071-68; C13D003-12; C13K013-00

AB WO 200253781 A UPAB: 20040709
NOVELTY - A process of separating compounds (C1) with a small molar mass from compounds (C2) with a molar mass less than 1.9 times that of C1, is novel.

DETAILED DESCRIPTION - A starting solution comprising compounds (C1) with small molar mass and compounds (C2) with the molar mass less than 1.9 times that of compounds with small molar mass is subjected to nanofiltration to obtain a **fraction** enriched in compounds (C1) and a **fraction** enriched in compounds (C2). The **fraction** enriched in compounds (C1) is recovered and the **fraction** enriched in compound (C2) is optionally recovered.

USE - This novel method of separation is used for the separation of compounds with small molar mass from compounds having molar mass less than 1.9 times of compounds having small molar mass, such as separation of 1 or more amino acids from betaine, separation of 1 or more amino acids from biomass hydrolysate or biomass extract, separation of carboxylic acids from 1 or more monosaccharides (claimed), recovery of xylose from spent liquors and recovery of betaine from sugar beat pulp extract.

ADVANTAGE - The complicated and cumbersome chromatographic or ion exchange steps, are completely or partly replaced by less complicated nanofiltration membrane techniques. The method provides xylose solution enriched in xylose and free from conventional impurities of biomass hydrolysates, and provides a solution enriched in betaine and free from undesired monosaccharides components such as glucose.

Dwg.0/0

FS CPI
FA AB; DCN
MC CPI: A12-H04; B04-C02A3; B04-C02B1; B04-C03B; B04-C03C; B04-C03D; **B10-A07**; B10-A22; B10-E04A; **B11-B**; D06-B; D06-H; E07-A02H; E10-A07; E10-A22D; E10-B02; E10-C02; E10-C04; E10-E04H; E11-Q01; J01-C03

L30 ANSWER 5 OF 8 WPIX COPYRIGHT 2005 THE THOMSON CORP on STN
AN 2001-465360 [50] WPIX
CR 1994-167479 [20]; 2003-777185 [73]; 2004-386880 [36]
DNC C2001-140498
TI Isolated polynucleotide, used to transform bacterial or yeast hosts which can then be used in the production of sugars and sugar alcohols, encodes xylitol phosphate dehydrogenase.
DC B03 B05 D13 D16 D17 E13 E17
IN ARISTDOU, A; DEUTSCHER, J; GROS, H; KOIVURANTA, K; LONDESBOROUGH, J; MIASNIKOV, A; OJAMO, H; PENTTILA, M; PLAZANET-MENUT, C; POVELAINEN, M; RICHARD, P; RUOHONEN, L; TOIVARI, M; ARISTIDOU, A; GROS, H K; PENTTILAE, M
PA (XYRO-N) XYROFIN OY; (DANI-N) **DANISCO SWEETENERS OY**
CYC 95
PI WO 2001053306 A2 20010726 (200150)* EN 205 C07H000-00
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W: AE AG AL AM AT AU AZ BA BB BG BR BY BZ CA CH CN CR CU CZ DE DK DM DZ EE ES FI GB GD GE GH GM HR HU ID IL IN IS JP KE KG KP KR KZ LC LK LR LS LT LU LV MA MD MG MK MN MW MX MZ NO NZ PL PT RO RU SD SE SG SI SK SL TJ TM TR TT TZ UA UG US UZ VN YU ZA ZW
AU 2001031784 A 20010731 (200171)
BR 2001007918 A 20021105 (200279) C12P007-18
EP 1254244 A2 20021106 (200281) EN C12P007-18
R: AL AT BE CH CY DE DK ES FI FR GB GR IE IT LI LT LU LV MC MK NL PT RO SE SI TR
CN 1395618 A 20030205 (200334) C12P007-18
JP 2003520583 W 20030708 (200347) 215 C12N015-09
KR 2003022771 A 20030317 (200350) C12P007-18
ADT WO 2001053306 A2 WO 2001-FI51 20010122; AU 2001031784 A AU 2001-31784

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20010122; BR 2001007918 A BR 2001-7918 20010122, WO 2001-FI51 20010122; EP 1254244 A2 EP 2001-903815 20010122, WO 2001-FI51 20010122; CN 1395618 A CN 2001-803948 20010122; JP 2003520583 W JP 2001-553780 20010122, WO 2001-FI51 20010122; KR 2003022771 A KR 2002-709341 20020719

FDT AU 2001031784 A Based on WO 2001053306; BR 2001007918 A Based on WO 2001053306; EP 1254244 A2 Based on WO 2001053306; JP 2003520583 W Based on WO 2001053306

PRAI US 2000-488581 20000121

IC ICM C07H000-00; C12N015-09; C12P007-18
ICS C12N001-15; C12N001-19; C12N001-21; C12N009-04; C12N015-52

AB WO 200153306 A UPAB: 20040608
NOVELTY - An isolated polynucleotide (I) comprising: (A) a nucleotide (nt) sequence encoding xylitol phosphate dehydrogenase; or (B) a nt sequence encoding arabitol phosphate dehydrogenase, where the enzyme has the aa sequence (S2) of 352 or 343 aas fully defined in the specification, or its functional homolog, is new.

DETAILED DESCRIPTION - The amino acid (aa) sequence of the enzyme is at least 35 % identical to a sequence (S1) of 349 aas fully defined in the specification.

INDEPENDENT CLAIMS are also included for the following:

(1) a vector (II) comprising (I);

(2) a host cell (III) comprising (II);

(3) a genetically engineered microbial host (IV) capable of producing (a) xylitol, or (b) xylulose-5-P-, (c) ribulose-5-P-, or (d) ribose-5-P-derived products;

(4) an isolated polynucleotide encoding S1;

(5) producing (M1) xylitol phosphate dehydrogenase or comprising culturing (III) and expressing the relevant enzyme;

(6) producing (M2) xylitol, comprising culturing a genetically engineered microbial host on a carbon source other than D-xylose and/or D-xylulose, or their polymers and oligomers, producing xylitol by using the host to convert one or more pentose phosphate pathway intermediates into xylitol by a non-arabitol pathway, and recovering the xylitol where the amount or rate of production is enhanced compared to that in the non-engineered host;

(7) producing (M3) a xylulose-5-P derived product, comprising culturing a genetically engineered microbial host on a carbon source other than D-xylose and/or D-xylulose, or their polymers and oligomers, using the host to convert one or more pentose phosphate pathway intermediates into xylulose-5-P and converting it into the product, and recovering the xylulose-5-P derived product, where the amount or rate of production is enhanced compared to that in the non-engineered host;

(8) producing (M4) a ribulose-5-P derived product, comprising culturing a genetically engineered microbial host on a carbon source other than D-xylose and/or D-xylulose, or their polymers and oligomers, using the host to convert one or more pentose phosphate pathway intermediates into ribulose-5-P and converting it into the product, and recovering the ribulose-5-P derived product, where the amount or rate of production is enhanced compared to that in the non-engineered host;

(9) producing (M5) a ribose-5-P derived product, comprising culturing a genetically engineered microbial host on a carbon source other than D-xylose and/or D-xylulose, or their polymers and oligomers, using the host to convert one or more pentose phosphate pathway intermediates into ribose-5-P and converting it into the product, and recovering the ribose-5-P derived product, where the amount or rate of production is enhanced compared to that in the non-engineered host;

(10) xylitol, or a xylulose-5-P-, ribulose-5-P-, or ribose-5-P-derived product, produced by M1-M5 respectively; and

(11) producing (M6) D-arabitol, comprising culturing a genetically engineered microbial host on a carbon source other than D-xylose and/or D-xylulose, or their polymers and oligomers, using the host to convert one or more pentose phosphate pathway intermediates into D-arabitol and converting it into the product, and recovering the product, where the amount or rate of production is enhanced compared to that in the non-engineered host.

USE - (I) is used to transform bacterial or yeast hosts which can

then be used in the production of xylitol, D-arabitol, or xylulose-5-P-, ribulose-5-P-, or ribose-5-P-derived products (claimed). Arabitol phosphate dehydrogenase is used in a microbial host cell to produce recombinant arabitol (claimed). Xylitol phosphate dehydrogenase and arabitol phosphate dehydrogenase are used in a microbial host cell to produce recombinant xylitol (claimed).
Dwg.0/27

FS CPI
FA AB; DCN
MC CPI: B04-D01; B04-E05; B04-E08; B04-F01; B04-F09; B04-L03D; B05-B01M; B05-B01P; B10-A07; D05-C03; D05-C08; D05-H08; D05-H13; D05-H14A1; D05-H14A2; D05-H17A; D06-G; E05-G09D; E07-A02D; E10-E04B

L30 ANSWER 6 OF 8 WPIX COPYRIGHT 2005 THE THOMSON CORP on STN
AN 2000-399712 [34] WPIX
DNC C2000-120678
TI Preparation and recovery of high purity L-ribose by epimerization of solution of L-arabinose in presence of molybdenum compound.
DC A97 B05 D17 E17
IN JUMPPANEN, J; NURMI, J; PASTINEN, O
PA (XYRO-N) XYROFIN OY
CYC 91
PI WO 2000029417 A1 20000525 (200034)* EN 59 C07H003-02
RW: AT BE CH CY DE DK EA ES FI FR GB GH GM GR IE IT KE LS LU MC MW NL OA PT SD SE SL SZ TZ UG ZW
W: AE AL AM AT AU AZ BA BB BG BR BY CA CH CN CR CU CZ DE DK DM EE ES FI GB GD GE GH GM HR HU ID IL IN IS JP KE KG KP KR KZ LC LK LR LS LT LU LV MA MD MG MK MN MW MX NO NZ PL PT RO RU SD SE SG SI SK SL TJ TM TR TT TZ UA UG UZ VN YU ZA ZW
AU 2000012715 A 20000605 (200042) C07H003-02
US 6140498 A 20001031 (200057) C07H001-06
EP 1131329 A1 20010912 (200155) EN C07H003-02
R: AL AT BE CH CY DE DK ES FI FR GB GR IE IT LI LT LU LV MC MK NL PT RO SE SI
KR 2001093079 A 20011027 (200223) C07H001-06
JP 2002530287 W 20020917 (200276) 39 C07H003-02
ADT WO 2000029417 A1 WO 1999-EP8771 19991115; AU 2000012715 A AU 2000-12715 19991115; US 6140498 A US 1998-193466 19981117; EP 1131329 A1 EP 1999-955994 19991115, WO 1999-EP8771 19991115; KR 2001093079 A KR 2001-706158 20010516; JP 2002530287 W WO 1999-EP8771 19991115, JP 2000-582404 19991115
FDT AU 2000012715 A Based on WO 2000029417; EP 1131329 A1 Based on WO 2000029417; JP 2002530287 W Based on WO 2000029417
PRAI US 1998-193466 19981117
IC ICM C07H001-06; C07H003-02
ICS C07H001-00
AB WO 200029417 A UPAB: 20000718
NOVELTY - High purity L-ribose is prepared by epimerization of a solution of L-arabinose in the presence of a molybdenum compound.
DETAILED DESCRIPTION - Preparation and recovery of high purity L-ribose crystals from a solution of L-arabinose comprises:
(a) heating a solution comprising L-arabinose, with stirring, in the presence of 0.05-5% (based on the amount of L arabinose in the solution) of a molybdenum compound, so that 10-35% of L-arabinose is converted to L-ribose;
(b) separating L-ribose to produce at least 1 fraction containing L-ribose having a purity of greater than 90% and transferring other fractions back to (a) or into chromatographic separation;
(c) crystallizing the L-ribose fraction to form monohydrate L-ribose crystals and
(d) recovering high purity L-ribose crystals.
INDEPENDENT CLAIMS are included for the following:
(I) crystallizing and recovering L-ribose crystals from chromatographic separated L-ribose solution which comprises:
(i) evaporating a L-ribose rich aqueous solution having a L-ribose content of greater than 90% to form a mixture having a dry solid content

of at least 85%;
(ii) cooling the mixture to below 40 deg. C and effecting monohydrate L-ribose crystal growth by seeding with anhydrous ribose crystals and
(iii) recovering L-ribose crystals and
(II) a product comprising crystalline L-ribose having a L-ribose content of greater than 95% and water content of less than 0.5%.
USE - Highly pure L-ribose crystals are used as a starting material for producing e.g. antiviral drugs.
Dwg.0/0

FS CPI
FA AB; DCN
MC CPI: A10-E12A; A12-M03; A12-W11; B05-A03B; B07-A02; **B10-A07**; **B11-B**; B11-C09; D06-G; E07-A02D; N03-D02

L30 ANSWER 7 OF 8 WPIX COPYRIGHT 2005 THE THOMSON CORP on STN
AN 2000-341703 [30] WPIX
DNC C2000-103837
TI Preparation of xylitol and erythritol, useful as low-calorie sweeteners from arabinoxylan-containing material.
DC B05 D13 E17
IN ALEN, R; **HEIKKILA, H**; KAUKO, S; **LINDROOS, M**; **NURMI, J**; **SARMALA, P**; TYLLI, M; HEIKKILAE, H
PA (XYRO-N) XYROFIN OY; (DANI-N) **DANISCO SWEETENERS OY**
CYC 29
PI EP 1002782 A2 20000524 (200030)* EN 9 C07C029-141
R: AL AT BE CH CY DE DK ES FI FR GB GR IE IT LI LT LU LV MC MK NL PT RO SE SI
AU 9959358 A 20000525 (200034) C07C031-24
JP 2000157300 A 20000613 (200035) 9 C13K013-00
FI 9802497 A 20000519 (200040) C07C031-18
CA 2289308 A1 20000518 (200041) EN C07C031-18
FI 106853 B1 20010430 (200131) C07C031-18
US 6262318 B1 20010717 (200142) C07C029-141
EP 1002782 B1 20020904 (200266) EN C07C029-141
R: AT BE CH CY DE DK ES FI FR GB GR IE IT LI LU MC NL PT SE
DE 69902737 E 20021010 (200274) C07C029-141
ADT EP 1002782 A2 EP 1999-660178 19991116; AU 9959358 A AU 1999-59358 19991111; JP 2000157300 A JP 1999-325374 19991116; FI 9802497 A FI 1998-2497 19981118; CA 2289308 A1 CA 1999-2289308 19991110; FI 106853 B1 FI 1998-2497 19981118; US 6262318 B1 US 1999-431426 19991101; EP 1002782 B1 EP 1999-660178 19991116; DE 69902737 E DE 1999-602737 19991116, EP 1999-660178 19991116
FDT FI 106853 B1 Previous Publ. FI 9802497; DE 69902737 E Based on EP 1002782
PRAI FI 1998-2497 19981118
IC ICM C07C029-141; C07C031-18; C07C031-24
ICS C07C029-136; C07C029-14; C07C029-147; C07C029-149; C07H001-08; C12P007-18
ICA C13K013-00
AB EP 1002782 A UPAB: 20000624
NOVELTY - Preparation of xylitol (I) and erythritol (II) from arabinoxylan-containing material (III) comprises hydrolysing (III) and separating xylose and **arabinose** from the hydrolysate. The xylose is then reduced to give (I) which is recovered. The **arabinose** is subjected to alkaline oxidation to give erythronic acid which is reduced to give (II) which is recovered.
USE - Preparation of xylitol and erythritol, useful as low calorie sweeteners
ADVANTAGE - The process allows the production of erythritol from a by-product in the production of xylitol.
Dwg.0/0

FS CPI
FA AB; DCN
MC CPI: **B10-A07**; D03-H01A; E10-A07

L30 ANSWER 8 OF 8 WPIX COPYRIGHT 2005 THE THOMSON CORP on STN
AN 1999-190640 [16] WPIX

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CR 1999-228906 [19]
DNC C1999-056169
TI Preparation of L-**arabinose** from sugar beet pulp from which sugar has been extracted.
DC D17 E13
IN ANTILA, J; RAVANKO, V; WALLIANDER, P; ANTILA, T J; RAVANKO, V K; WALLIANDER, P O
PA (CULT-N) CULTOR CORP; (DANI-N) **DANISCO FINLAND OY**; (DANI-N) **DANISCO SUGAR OY**; (CULT-N) CULTOR OYJ
CYC 83
PI WO 9910542 A1 19990304 (199916)* EN 13 C13K013-00
RW: AT BE CH CY DE DK EA ES FI FR GB GH GM GR IE IT KE LS LU MC MW NL OA PT SD SE SZ UG ZW
W: AL AM AT AU AZ BA BB BG BR BY CA CH CN CU CZ DE DK EE ES FI GB GE GH GM HR HU ID IL IS JP KE KG KP KR KZ LC LK LR LS LT LU LV MD MG MK MN MW MX NO NZ PL PT RO RU SD SE SG SI SK SL TJ TM TR TT UA UG US UZ VN YU ZW
FI 9800119 A 19990227 (199922) C13K000-00
AU 9889815 A 19990316 (199930)
FI 104500 B1 20000215 (200015)
EP 1012349 A1 20000628 (200035) EN C13K013-00
R: AL AT BE CH CY DE DK ES FI FR GB GR IE IT LI LT LU LV MC MK NL PT RO SE SI
JP 2001514018 W 20010911 (200167) 14 C13K013-00
US 6506897 B1 20030114 (200313) C07H001-08
EP 1012349 B1 20040630 (200444) EN C13K013-00
R: AL AT BE CH CY DE DK ES FI FR GB GR IE IT LI LT LU LV MC MK NL PT RO SE SI
DE 69824868 E 20040805 (200451) C13K013-00
ADT WO 9910542 A1 WO 1998-FI667 19980826; FI 9800119 A FI 1998-119 19980120; AU 9889815 A AU 1998-89815 19980826; FI 104500 B1 FI 1998-119 19980120; EP 1012349 A1 EP 1998-941444 19980826, WO 1998-FI667 19980826; JP 2001514018 W WO 1998-FI667 19980826, JP 2000-507847 19980826; US 6506897 B1 WO 1998-FI667 19980826, US 2000-486437 20001030; EP 1012349 B1 EP 1998-941444 19980826, WO 1998-FI667 19980826; DE 69824868 E DE 1998-624868 19980826, EP 1998-941444 19980826, WO 1998-FI667 19980826
FDT AU 9889815 A Based on WO 9910542; FI 104500 B1 Previous Publ. FI 9800119; EP 1012349 A1 Based on WO 9910542; JP 2001514018 W Based on WO 9910542; US 6506897 B1 Based on WO 9910542; EP 1012349 B1 Based on WO 9910542; DE 69824868 E Based on EP 1012349, Based on WO 9910542
PRAI FI 1998-119 19980120; FI 1997-3501 19970826
IC ICM C07H001-08; C13K000-00; C13K013-00
AB WO 9910542 A UPAB: 20040810
NOVELTY - A simplified preparation of L-**arabinose** from a sugar beet pulp feedstock comprises alkaline extraction, acid hydrolysis, chromatographic separation and crystallization.

DETAILED DESCRIPTION - Crystalline L-**arabinose** is prepared by:-

(a) Extraction of sugar beet pulp from which sugar has been extracted in a strong alkaline solution,

(b) Hydrolysing the crude araban obtained with a strong acid at elevated temperature.

(c) Neutralising and filtering the solution obtained.

(d) Chromatographically separating the L-**arabinose** **fraction** using a cation exchanger in monovalent metal form as separation resin,

(e) Purifying the L-**arabinose** solution obtained using cation and anion exchangers and adsorbent resins, and

(f) Recovering pure crystalline L-**arabinose**.

USE - The process is useful as an alternative preparation to acid hydrolysis of gum arabic or other **arabinose**-containing vegetable materials

ADVANTAGE - Good yields can be obtained without multiple separation and purification steps

Dwg.0/0
FS CPI

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FA AB; DCN
MC CPI: D06-A; E10-A07; E11-Q01; E31-N05C; E34-D01

=> d all tech l29 1-3

L29 ANSWER 1 OF 4 WPIX COPYRIGHT 2005 THE THOMSON CORP on STN
AN 2004-106459 [11] WPIX
CR 1997-502836 [46]; 1997-512280 [47]; 2001-397990 [42]; 2002-040110 [05]; 2002-696800 [75]; 2002-697403 [75]; 2004-153775 [15]; 2004-255865 [24]; 2004-783873 [77]; 2005-370768 [38]
DNC C2004-043176
TI Polymeric compound used as antineoplastic agents, antioxidants, DNA topoisomerase II enzyme inhibitors, cyclo-oxygenase and/or lipoxygenase modulators, nitric oxide (NO) or NO-synthase modulators comprises procyanidin groups.
DC A96 B02 B04 D13 D21
IN ROMANCZYK, L J; SCHMITZ, H H
PA (MRSC) MARS INC
CYC 1
PI US 2003113290 A1 20030619 (200411)* 322 A61K031-765
ADT US 2003113290 A1 CIP of US 1996-631661 19960402, Cont of US 1997-831245 19970402, Cont of US 2000-717893 20001121, Cont of US 2001-776649 20010205, US 2002-127817 20020422
FDT US 2003113290 A1 Cont of US 6297273
PRAI US 1997-831245 19970402; US 1996-631661 19960402; US 2000-717893 20001121; US 2001-776649 20010205; US 2002-127817 20020422
IC ICM A61K031-765
ICS C07D405-14
AB US2003113290 A UPAB: 20050616
NOVELTY - A polymeric compound comprises procyanidin groups.
DETAILED DESCRIPTION - A polymeric compound procyanidins of formula An.
A = monomer of formula (I);
n = 3-18, such that there is terminal monomeric unit A and/or additional monomeric units.
R = 3-(alpha)-OH, 3-(beta)-OH, 3-(alpha)-O-sugar or 3-(beta)-O-sugar;
X, Y, Z = monomeric unit A, H, or sugar.
The bonding between adjacent monomers takes place at positions from 4, 6 or 8. A bond for an additional monomeric unit in position 4 has alpha or beta stereochemistry. The sugar is optionally substituted with a phenolic moiety, and pharmaceutically acceptable salts, their derivatives or their oxidation products. The terminal monomeric unit, bonding of the additional monomeric unit is at position 4 and optionally Y= Z = H.
INDEPENDENT CLAIMS are also included for:
(1) a kit for a composition comprising the compound and the carrier or diluent separately packaged and optionally instructions for admixture or administration;
(2) a carrier or vehicle for a pharmaceutical comprising a cocoa extract;
(3) a pure polyphenol from Theobroma or Herrania species or inter-intra-species crosses comprising polyphenols comprising oligomers; and
(4) a method for the identification of the gene induced or repressed by a polymeric compound.
ACTIVITY - Cytostatic; Antibacterial; Antiinflammatory; Antilipemic; Arteriosclerotic; Vasotropic; Gastrointestinal-Gen.; Hypotensive
MECHANISM OF ACTION - Cyclo-oxygenase Modulator; Lipoxygenase Modulator; Nitric Oxide (NO) Modulator; NO-synthase (NOS) Modulator; iNOS Inducer; Blood Glucose Modulator; DNA Topoisomerase-II Inhibitor; Platelet Aggregation Modulator; Apoptosis Modulator; LDL Oxidation Inhibitor; Bacterial Growth Inhibitor (claimed).
USE - Used as antineoplastic agent, antioxidant, antimicrobial, non-steroidal antiinflammatory (NSAID) agent to treat NO-affected

hypercholesterolemia, gingivitis, periodontitis, atherosclerosis, restenosis, inflammatory bowel disease, hypertension and cancer (claimed).
DESCRIPTION OF DRAWING(S) - The figure is a gel permeation chromatogram from the **fractionation** of crude cocoa procyanidins.
Dwg.1/65

FS CPI
FA AB; GI; DCN
MC CPI: A03-A00A; A12-V01; B04-E01; B06-A01; B11-C08E; B12-K04; B14-A01; B14-C03; B14-D05C; B14-D09; B14-E10C; B14-F01G; B14-F02B; B14-F06; B14-F07; B14-H01B; B14-H03; B14-H04; B14-N06B; B14-S08; D03-E; D08-A
TECH UPTX: 20040213
TECHNOLOGY FOCUS - ORGANIC CHEMISTRY - Preferred Component: The sugar can be glucose, galactose, xylose, rhamnose or **arabinose**. The compound is isolated from a natural source. The natural source is a Theobroma or Herrania species or inter- or its intra-species specific crosses. The phenolic moiety can be caffeic, cinnamic, coumaric, ferulic, gallic, hydroxybenzoic or sinapic acids.
Preferred Compound: The compound is a trimer of formula (EC-(4beta-8))2-EC, a tetramer of formula (EC-(4beta-8))3-EC, the compound is a pentamer of formula (EC-(4beta-8))4-EC, a hexamer of formula (EC-(4beta-8))5-EC, a heptamer of formula (EC-(4beta-8))6-EC, octamer of formula (EC-(4beta-8))7-EC, nonamer of formula (EC-(4beta-8))8-EC, a decamer of formula (EC-(4beta-8))9-EC, an undecamer of formula (EC-(4beta-8))10-EC or a dodecamer of formula (EC-(4beta-8))11-EC.

L29 ANSWER 2 OF 4 WPIX COPYRIGHT 2005 THE THOMSON CORP on STN
AN **2002-268859** [31] WPIX
CR 2004-561165 [54]
DNC C2002-079691
TI Extraction of bio-functional and bio-responsive **fractions** e.g. cellulose from a biomass, involves treating the biomass with saturated steam and rapidly depressurizing the mixture.
DC A96 B04 D17
IN VAN THORRE, D; THORRE, D V
PA (THOR-N) THORRE TECHNOLOGIES LLC; (THOR-I) THORRE D V; (SWEE-N) SWEET BEET INC
CYC 97
PI WO 2002004084 A2 20020117 (200231)* EN 32 B01D000-00
RW: AT BE CH CY DE DK EA ES FI FR GB GH GM GR IE IT KE LS LU MC MW MZ NL OA PT SD SE SL SZ TR TZ UG ZW
W: AE AG AL AM AT AU AZ BA BB BG BR BY BZ CA CH CN CO CR CU CZ DE DK DM DZ EC EE ES FI GB GD GE GH GM HR HU ID IL IN IS JP KE KG KP KR KZ LC LK LR LS LT LU LV MA MD MG MK MN MW MX MZ NO NZ PL PT RO RU SD SE SG SI SK SL TJ TM TR TT TZ UA UG US UZ VN YU ZA ZW
US 6365732 B1 20020402 (200231) C08B011-00
AU 2001081312 A 20020121 (200234) B01D000-00
EP 1301542 A2 20030416 (200328) EN C08B011-00
R: AL AT BE CH CY DE DK ES FI FR GB GR IE IT LI LT LU LV MC MK NL PT RO SE SI TR
US 2003176669 A1 20030918 (200362) C08B016-00
ADT WO 2002004084 A2 WO 2001-US41322 20010710; US 6365732 B1 US 2000-613411 20000710; AU 2001081312 A AU 2001-81312 20010710; EP 1301542 A2 EP 2001-959793 20010710, WO 2001-US41322 20010710; US 2003176669 A1 Cont of WO 2001-US41322 20010710, US 2003-340877 20030110
FDT AU 2001081312 A Based on WO 2002004084; EP 1301542 A2 Based on WO 2002004084
PRAI US 2000-613411 20000710; US 2003-340877 20030110
IC ICM B01D000-00; C08B011-00; C08B016-00
ICS C07H001-00; C08B037-00; D21C007-12
AB WO 200204084 A UPAB: 20040823
NOVELTY - Extraction of bio-functional and bio-responsive **fractions** comprising a stereoisomer from a biomass involves: (a) harvesting the biomass; (b) treating the biomass with a saturated steam to extract bio-functional and bio-responsive **fractions**; and (c) rapidly depressurizing the biomass and steam.
DETAILED DESCRIPTION - INDEPENDENT CLAIMS are included for the

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following:

(1) a bio-refined extract containing monomers, oligomers and polymers of carboxymethylcellulose;

(2) a biomass extract consisting of a water soluble **fraction** containing pectin;

(3) a biomass extract (A) containing cellulose, protein and lignin;

(4) an insoluble bio-refined extract (B) obtained from (A) containing cellulose in a native form;

(5) a bio-refined extract of the biomass comprising an insoluble **fraction** (C) containing pectin and arabinogalactan;

(6) a bio-refined extract of the biomass derived from the insoluble **fraction** of (C) containing L-**arabinose**, galacturonic acid and xylose;

(7) a bio-refined extract containing protein isolates;

(8) a bio-refined extract containing coniferyl alcohol; and

(9) a system for obtaining monosaccharides, oligosaccharides and polysaccharides form the biomass comprising: a mechanism for instantaneously pressurizing and de-pressurizing the biomass to separate the biomass into hemicellulose, cellulose and lignin; a heater for heating the hemicellulose to liquefy the hemicellulose; a reactor or mixer for mixing sodium hydroxide with hemicellulose to obtain hemicellulose hydrolysate; and a mechanism for selectively separating the hemicellulose hydrolysate based upon the stereoisomeric identity of the component.

USE - For extracting optically pure bio-functional and bio-responsive **fractions** from a biomass, such as monomers, oligomers and polymers including cellulose, protein, lignin, pectin, hemicellulose, arabinogalactan, d- and l-**arabinose**, galactouronic acid, d- and l-xylose, d- and l-glucose, proteins, coniferyl alcohol, any other racemic carbohydrate and any other backbone polymer (all claimed), from drug and fine chemical feedstock.

ADVANTAGE - The method is simple and efficient and does not involve harsh solvents or conditions. Thus reduces the thermal decomposition of the material and produces the materials in high yield and having a high degree of optical purity, bio-functionality and bio-response, with a minimal amount of physical and chemical alteration from a native state.

Dwg.0/4

FS CPI

FA AB; DCN

MC CPI: A03-A01; A03-C01; A10-A; A10-G01B; B04-C02; B04-C03; B04-N04; B07-A02B; **B10-A07**; D06-A; D06-F; D06-G; D06-H

TECH UPTX: 20020516

TECHNOLOGY FOCUS - ORGANIC CHEMISTRY - Preferred Method: The biomass is pressurized at 390 - 460degreesF for 2 minutes - 4 hours (preferably not more than10 minutes). The method involves reducing the biomass to a size of the sawdust and compacting the biomass prior to the pressurization. The biomass is fed continuously for the pressurization. The biomass is hydrolyzed in a reactor or static mixer. The method involves separation of the lignin, hemicellulose and cellulose in the biomass by subjecting the biomass to instantaneous pressurization and de-pressurization; hydrolyzing the hemicellulose to form hemicellulose hydrolysate; and separating at least one stereoisomer from the hemicellulose hydrolysate by adsorption. The hemicellulose **fraction** does not enter a glassy state but is liquefied. For the preparation of (A), the hydrolysis is carried out at 329 - 347degreesF by adding aqueous sodium hydroxide to the static mixer in a flowpath that is counter-current to the flow of hemicellulose. In the preparation of (A), the stereoisomer separation is performed with co-polymer beads. The method further involves extracting derivatives and substituents from cellulose and lignin; and crystallizing the separated product using low intensity ultrasonic agitation.

Preferred Composition: The biomass extract contains (wt.%): pectin **fraction** (30) and a cellulose, protein and lignin containing **fraction** (70). The biomass is selected from wood, beets, corn, soy, wheat or plant biomass (preferably sugar beet pulp).

TECHNOLOGY FOCUS - MECHANICAL ENGINEERING - Preferred System: The system further involves a mechanism for receiving the hemicellulose hydrolysate.

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TECHNOLOGY FOCUS - POLYMERS - Preferred Composition: The hemicellulose hydrolysate comprises d-**arabinose**, l-**arabinose**, d-xylose, l-xylose, d-glucose, l-glucose, polygalacturonic acid, any other racemic carbohydrate, or any backbone polymer, which are separated into optically pure products (preferably l-**arabinose**). The l-**arabinose** is produced at a rate of at least 1000 pounds per day.

L29 ANSWER 3 OF 4 WPIX COPYRIGHT 2005 THE THOMSON CORP on STN
AN **2000-105567** [09] WPIX
DNC C2000-031624
TI Mixture containing triterpene glycosides, useful for treating variety of tumor cells.
DC B04 D16
IN ARNTZEN, C J; BAILEY, D T; BLAKE, M; GUTTERMAN, J U; HOFFMAN, J J; JAY-ATILAKE, G S; HOFFMANN, J J; JAYATILAKE, G S; TRACEY, M B; HARIDAS, V; BLAKE, M E
PA (RERE-N) RES DEV FOUND
CYC 86
PI WO 9959578 A1 19991125 (200009)* EN 312 A61K031-33
RW: AT BE CH CY DE DK EA ES FI FR GB GH GM GR IE IT KE LS LU MC MW NL OA PT SD SE SL SZ UG ZW
W: AL AM AT AU AZ BA BB BG BR BY CA CH CN CU CZ DE DK EE ES FI GB GD GE GH GM HR HU ID IL IN IS JP KE KG KP KR KZ LC LK LR LS LT LU LV MD MG MK MN MW MX NO NZ PL PT RO RU SD SE SG SI SK SL TJ TM TR TT UA UG UZ VN YU ZA ZW
AU 9940871 A 19991206 (200019) A61K031-33
EP 1079824 A1 20010307 (200114) EN A61K031-33
R: AT BE CH CY DE DK ES FI FR GB GR IE IT LI LU MC NL PT SE
KR 2001034867 A 20010425 (200164) A61K031-33
CN 1307473 A 20010808 (200173) A61K031-33
JP 2002515430 W 20020528 (200238) 327 A61K035-78
US 6444233 B1 20020903 (200260) A61K035-78
ZA 2000005936 A 20021127 (200305) 322 A61K000-00
US 2003031738 A1 20030213 (200314) A61K035-78
US 2003039705 A1 20030227 (200318) A61K035-78
US 2003054052 A1 20030320 (200323) A61K035-78
AU 761879 B 20030612 (200349) A61K031-33
US 2003203049 A1 20031030 (200372) A61K035-78
NZ 507791 A 20031219 (200404) A61K035-78
US 6689398 B2 20040210 (200413) A61K035-78
AU 2003244612 A1 20031002 (200428) A61K031-33
US 6746696 B2 20040608 (200437) A61K035-78
RU 2244547 C2 20050120 (200513) A61K031-33
NZ 528940 A 20050225 (200519) A01H004-00
ADT WO 9959578 A1 WO 1999-US11041 19990519; AU 9940871 A AU 1999-40871 19990519; EP 1079824 A1 EP 1999-924348 19990519, WO 1999-US11041 19990519; KR 2001034867 A KR 2000-712954 20001117; CN 1307473 A CN 1999-807877 19990519; JP 2002515430 W WO 1999-US11041 19990519, JP 2000-549243 19990519; US 6444233 B1 Provisional US 1998-85997P 19980519, Provisional US 1998-99066P 19980903, US 1999-314691 19990519; ZA 2000005936 A ZA 2000-5936 20001024; US 2003031738 A1 Provisional US 1998-85997P 19980519, Provisional US 1998-99066P 19980903, Div ex US 1999-314691 19990519, US 2001-720 20011130; US 2003039705 A1 Provisional US 1998-85997P 19980519, Provisional US 1998-99066P 19980903, Cont of US 1999-314691 19990519, US 2001-992837 20011116; US 2003054052 A1 Provisional US 1998-85997P 19980519, Provisional US 1998-99066P 19980903, Div ex US 1999-314691 19990519, US 2001-999495 20011130; AU 761879 B AU 1999-40871 19990519; US 2003203049 A1 Provisional US 1998-85997P 19980519, Provisional US 1998-99066P 19980903, Div ex US 1999-314691 19990519, Div ex US 2001-720 20011130, US 2002-238647 20020909; NZ 507791 A NZ 1999-507791 19990519, WO 1999-US11041 19990519; US 6689398 B2 Provisional US 1998-85997P 19980519, Provisional US 1998-99066P 19980903, Div ex US 1999-314691 19990519, US 2001-999495 20011130; AU 2003244612 A1 AU 2003-244612 20030909; US 6746696 B2 Provisional US 1998-85997P 19980519, Provisional US 1998-99066P 19980903, Cont of US 1999-314691 19990519, US 2001-992837 20011116; RU

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2244547 C2 WO 1999-US11041 19990519, RU 2000-131681 19990519; NZ 528940 A Div ex NZ 1999-507791 19990519, NZ 1999-528940 19990519

FDT AU 9940871 A Based on WO 9959578; EP 1079824 A1 Based on WO 9959578; JP 2002515430 W Based on WO 9959578; AU 761879 B Previous Publ. AU 9940871, Based on WO 9959578; US 2003203049 A1 Div ex US 6444233; NZ 507791 A Div in NZ 528940, Based on WO 9959578; AU 2003244612 A1 Div ex AU 761879; RU 2244547 C2 Based on WO 9959578; NZ 528940 A Div ex NZ 507791

PRAI US 1998-99066P 19980903; US 1998-85997P 19980519;
US 1999-314691 19990519; US 2001-720 20011130;
US 2001-992837 20011116; US 2001-999495 20011130;
US 2002-238647 20020909

IC ICM A01H004-00; A61K000-00; A61K031-33; A61K035-78
ICS A01G005-04; A01N043-00; A01N043-000; A01N043-04; A61K007-42; A61K031-70; A61K031-7028; A61K031-704; A61K031-74; A61K035-788; A61K041-00; A61P029-00; A61P035-00; A61P043-00; C12N005-00; C12N005-000; C12N005-04

ICA C07H015-18; C07H015-256

AB WO 9959578 A UPAB: 20000218

NOVELTY - Mixture comprising one or more triterpene glycosides (I) isolated from Acacia victoriae, is new.

DETAILED DESCRIPTION - INDEPENDENT CLAIMS are also included for the following:

(i) a composition comprising a triterpene moiety attached to a monoterpene moiety of formula (I);

(ii) preparing a composition comprising a mixture as in (I) comprising obtaining a tissue from an A. victoriae plant, extracting the tissue and isolating the glycosides

(iii) continually harvesting an A. victoriae plant by cultivating the plant in a hydroponic growth system and harvesting the tissue 1-4 times per year (without killing the plant); and

(iv) a process for preparing a composition with a mixture of one or more isolated triterpene glycosides by obtaining A. victoriae tissue and extracting the tissue with a solvent.

R1 and R2 = H, 1-5C alkyl, or oligosaccharide;

R3 = H, OH, 1-5C alkylene, 1-5C alkyl (carbonyl), sugar or monoterpene; and optionally further comprises

R4 = H, OH, 1-5C alkylene, 1-5C alkyl (carbonyl), a sugar, 1-5C alkyl ester or monoterpene and may be attached to the triterpene or monoterpene moiety.

ACTIVITY - Antitumor; cytotoxic; antioxidant; fungicide, virucide; piscicide; molluscicide; contraceptive; antihelmintic; expectorant; diuretic; anti-inflammatory; cardiant; anti-ulcer; analgesic; sedative; immunomodulator; antipyretic; anti-aging; vasotropic.

The viability of A. victoriae extract (UA-BRF-004-DELEP-F035) was tested on cancer and non-transformed cells. Jurkat (T-cell leukemia) cells were highly sensitive to compound F035 with an IC50 of 0.2 micro g/ml. F035 also inhibited the ovarian, renal, pancreatic, prostate and breast cancers with an IC50 of 1.7-2.8, 2.0-3.3, 0.93, 1.2-6.5 and 0.7-4.0 ml respectively. More than 25 micro g/ml of F035 was required to kill 50% of non-transformed human and mouse fibroblasts and immortalized breast epithelium cells, suggesting that F035 was specifically cytotoxic to cancer cells.

MECHANISM OF ACTION - Apoptosis inducer.

Induces cytotoxicity and apoptosis in malignant mammalian cells thereby inducing cytochrome c release from mitochondria followed by the activation of the capase-3 pathway. The activation of capase-3 in F035 treated cells was found to be above 1 fluorescence units/minutes/mg. Activation started at 4 hours post treatment and peaks were obtained at 6-8 hours with capase activity of more than 5 fluorescence units/minutes/mg.

USE - The composition is used for the treatment of cancer, inhibiting the initiation and promotion of mammalian epithelial cells (such as skin, colon, uterine, ovarian, pancreatic, prostate, renal, lung, bladder or breast cells), for preventing the abnormal proliferation of mammalian epithelial cells (such as crypt or colon cells), and/or regulating angiogenesis (claimed). (I) may also be used as a solvent, an antioxidant,

antifungal or antiviral agent, piscicide, molluscicides, contraceptive, antihelmintic, angiogenesis regulator, UV-protectant, expectorant, diuretic, anti-inflammatory agent, regulator of cholesterol metabolism, cardiovascular effecter, anti-ulcer agent, analgesic, sedative, immunomodulator, antipyretic, as an agent for decreasing capillary fragility, combating the effects of aging, increasing skin collagen, enhancing penile function and improving cognition and memory.

ADVANTAGE - (I) induces cytotoxicity in Jurkat cells with an IC50 of 0.12-0.40 micro g/ml. (I) also induces apoptosis at a dose of 100-400 ng/ml (measured by reorganization of plasma membrane of the Jurkat cell by annexin binding using a flow cytometer). Capase activity of (I) is from 0.3-1.6 fluorescence units/minutes/mg. Compounds of (I) may be specifically cytotoxic to cancer cells.

Dwg.0/50

FS CPI

FA AB; GI; DCN

MC CPI: B04-A07E; B04-A10; B04-C02X; B04-D01; B07-A02; B09-B; **B10-A07** ; B14-A02; B14-A04; B14-B03; B14-B11; B14-B12; B14-C01; B14-C03; B14-C04; B14-D01; B14-D02A; B14-D03; B14-D06; B14-D07C; B14-E08; B14-F01; B14-F06; B14-G03; B14-H01; B14-J01A4; B14-J01B2; B14-K01E; B14-N08; B14-N17; B14-P01; B14-P02; B14-R05; B14-S08; D05-H08; D05-H14A1

TECH UPTX: 20000218

TECHNOLOGY FOCUS - BIOTECHNOLOGY - Preferred Plant: The plant comprises at least one triterpene glycoside having a molecular weight of 1800-2600. The plant (A. victoriae) is grown in an aeroponic system.

Preferred Tissue Culture: The culture comprises a hairy root tissue culture of A. victoriae in a medium with 3-4 weight percent sucrose, infected with Agrobacterium rhizogenes R-1000. The tissue (e.g. pod, root, or seedling tissues) is defatted with an organic solvent prior to extraction, filtering the extract from plant bagasse and then evaporating the solvent.

TECHNOLOGY FOCUS - ORGANIC CHEMISTRY - Preferred Solvent: The extraction solvent is methanol, ethanol, isopropyl alcohol, dichloromethane, chloroform, ethyl acetate, water and/or glycerol. The defatting solvent is hexane, dichloromethane and/or ethyl acetate.

Preferred Eluent: Triterpene glycoside is isolated using liquid chromatography with methanol, acetonitrile and/or water as eluent.

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L29 ANSWER 4 OF 4 WPIX COPYRIGHT 2005 THE THOMSON CORP on STN

AN **1988-214129** [31] WPIX

DNC C1988-095445

TI Recovering L-**arabinose** from araban containing plant material - by solubilising with calcium hydroxide, acid hydrolysis, chromatographic separation and crystallisation.

DC D17 E13

IN SCHIWECK, H; VOGEL, M

PA (BOEF) SUEDDEUT ZUCKER AG

CYC 11

PI EP 276702 A 19880803 (198831)* GE 6
R: AT BE CH DE FR GB IT LI NL SE
DE 3702653 A 19880811 (198833) 6
DE 3702653 C 19881110 (198845)
US 4816078 A 19890328 (198915) 5
EP 276702 B 19901205 (199049)
R: AT BE CH DE FR GB IT LI NL SE
DE 3861191 G 19910117 (199104)

ADT EP 276702 A EP 1988-100515 19880115; DE 3702653 A DE 1987-3702653 19870129; US 4816078 A US 1988-146669 19880121

PRAI DE 1987-3702653 19870129

REP 3.Jnl.Ref; A3...8901; CS 129664; CS 181485; GB 1182099; JP 53059699; No-SR.Pub; JP 78059699

IC C07H003-02; C13K013-00

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AB EP 276702 A UPAB: 19930923
Production of crystalline L-**arabinose** (I) from araban (II)-containing plant material comprises (1) solubilising (II) at 105-160 deg.C at autologous pressure in a closed vessel for 2-20 min., using an aqueous solution containing 0.5-2 weight% Ca(OH)2 at 6-17 weight% Ca(OH)2 per kg dry matter; (2) neutralising the cooled solution with acid and filtering off undecomposed plant material and inorganic ppte; (3) evaporating the aqueous phase to 40-60% dry matter, and separating into (II)-containing and by-product **fractions** on a strongly acidic (especially highly crosslinked) cation exchange in Ca form; (4) hydrolysing the (II)-containing **fraction** with 0.5-2 weight% aqueous H2SO4 at 92-97 deg.C for 50-80 min; (5) neutralising the hydrolysis solution with CaCO3, filtered off solids and concentration to 40-60
dry matter; (6) the concentrate is separated into (I)-containing and by-product **fractions** on the same type of column as in step (3); (7) concentration of the (I) -**fraction** to 60-80% dry matter and cooling to cause crystallisation then separating the crystals, opt. recrystallising the mother liquor and recycling the final mother liquor to step (4).
USE/ADVANTAGE - The method is especially used to recover (I) from beet slices from which sugar has been removed. It provides good yields of high purity (over 98%) (I) from an entirely aqueous system.
0/2
FS CPI
FA AB; DCN
MC CPI: D06-G; E07-A02H
ABEQ DE 3702653 C UPAB: 19930923
Crystalline L-**arabinose** is obtd. from vegetable mater contg. araban by (a) treating vegetable matter with an aqueous soln. contg. 0.5-2 wt.% Ca(OH)2 at 105-160 deg.C in a closed vessel for 2-20 mins at a pressure regulated by itself (b) cooling and neutralising with acid and then filtering off undecompose vegetable matter and inorganic ppte. (c) evaporating the aqueous phase obtd. to a dry wt. content of 40-50% and then passing it through a strongly acid, pref. slightly crosslinked cation exchanger in the Ca-form to obtain an araban-contg. **fraction** and a by-prod.-contg. **fraction** (d) hydrolysing the araban-contg. **fraction** with an aqueous soln. contg. 0.5-2 wt.% sulphuric acid at 92-97 deg.C for 50-80 min. (e) neutralising the soln. obtd. by adding CaCO3, filtering off the ppte and evaporating the soln. to a dry wt. content of 46-60% (f) the soln. is passed through a strongly acid, pref. slightly crosslinked cation exchanger in the Ca-form to obtain a **fraction** contg. L-**arabinose** and a **fraction** contg. by-prods. (g) concentrating the **arabinose** **fraction** to a dry wt. content of 60-80%, effecting crystallisation by cooling, separating off the crystals, pref. recrystallise the mother liquor and recycling the final mother liquor to stage (e).
ADVANTAGE - The L-**arabinose** is obtd. in crystal form and in good yield.
ABEQ EP 276702 B UPAB: 19930923
A process for preparing crystalline L-**arabinose** from an araban-containing plant material by hydrolysis in a Ca(OH)2-containing suspension, characterised in that (a) the araban is brought into solution at temperatures between 105 deg and 160 deg. C at the pressure developed in a closed vessel during a reaction time of 2 to 20 minutes using an aqueous reaction solution containing from 0.5 to 2% by weight of Ca(OH)2 corresponding to a proportion of 6 to 17% by weight of Ca(OH)2 per kilogramme of dry material, (b) after cooling the reaction solution is neutralised with acid and filtered from the unhydrolysed plant material and the inorganic precipitate formed, (c) the resulting aqueous phase is evaporated down to a dry content of from40 to 60% and is then separated by means of a strongly acidic cation exchanger, in particular one that is slightly crosslinked, in the Ca form into an araban-containing **fraction** and **fractions** containing by-products, (d) the araban-containing **fraction** is hydrolysed with an aqueous 0.5 to 2% by weight H2SO4 solution at 92 to 97 deg. C for 50 to 80 minutes, (e) the hydrolysis solution from (d) is neutralised by addition of CaCO3, filtered off from the precipitate and evaporated down to a dry substance content of 40 to 60%, (f) the concentrated solution obtained by step (e)

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is separated by means of a strongly acid cation exchanger, in particular one that is slightly crosslinked, in the Ca form into an L-**arabinose**-containing **fraction** and **fractions** containing by-products, (g) the **arabinose**-containing **fraction**, after concentration to a dry substance content of 60 to 80%, is subjected to crystallisation by cooling and the resulting crystals are separated off, and if desired the mother liquor is re-crystallised and the last mother liquor is returned to the separation according to (d).

ABEQ US 4816078 A UPAB: 19930923

Crystalline L-**arabinose** is produced from an araban-contg. plant material by

disintegration in a Ca(OH)2-contg. suspension. Process comprises (a) dissolving araben at 105-160 deg. C at an adjusting pressure obtd. in a closed vessel for 2-20 mins. reaction period using an aq. reaction soln. to final conc. 0.5-2 wt. % Ca(OH)2 (corresp. to 6-17 wt.% Ca(OH)2 per kg. material); (b) neutralising soln. with acid after cooling, then filtering to separate undissolved plant material and inorganic ppte,; (c) concentrating aq. phase to 40-60 wt.% of araban by evaporation, then sepg. using a strong acid, weakly crosslinked cationic exchanger in Co-form to obtain an araban-contg. **fraction** and a by-prod. **fraction** ; (d) hydrolysing araban **fraction** with 0.5-2 wt. % H2SO4 soln. at 92-97 deg. C for 50-80 mins.; (e) neutralising by adding CaCO2, sepg. the ppte. obtd. by filtering, and concentrating the ppte. removed soln. to 40-60 wt. % by evaporation; (f) sepg. conc. soln. obtd. by a strong acid weakly crosslinked cationic exchanger in Ca-form into an L-**arabinose**-contg. **fraction** and a by-prod. **fraction**; and (g) concentrating soln. to 60-80%, cooling to crystallise the **arabinose**, then sepg.

USE - To isolate L-**arabinose** from beet pulp.

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